

Title (en)

A magnetic steel sheet having excellent magnetic characteristics and blanking performance

Title (de)

Elektroblech mit verbesserten magnetischen Eigenschaften und verbesserter Stanzbarkeit

Title (fr)

Tôle d'acier magnétique ayant des propriétés magnétiques améliorées et ayant une aptitude améliorée à l'estampage

Publication

EP 0741191 A3 19971029 (EN)

Application

EP 96106835 A 19960430

Priority

JP 10848395 A 19950502

Abstract (en)

[origin: US5714017A] A magnetic steel sheet containing, on a weight basis, 0.2 to 6.5% of Si and 0.03 to 2.5% of Mn, having a crystallographic texture wherein the density of aggregation of {100} planes parallel to the surface of the sheet is not less than 10 times that of non-oriented crystal grains, and having a demanganized layer in which the concentration of manganese decreases from the interior of the sheet toward the surface of the sheet, wherein the ratio between the concentration of manganese in the surface portion of the sheet and that in the mid depth portion of the sheet is not more than 0.90 and wherein the maximum ratio of reduction in the concentration of manganese within the demanganized layer is not more than 0.05 wt %/ μm. Magnetic characteristics of the magnetic steel sheet improved by adopting the average grain diameter 0.25 to 10 times the thickness of the sheet and by applying to the sheet a tension smaller than the elastic limit of the sheet in a direction parallel to the surface of the sheet. By employing an appropriate ratio of reduction in the Mn concentration, a relatively high magnetic flux density is obtained without a sharp increase in magnetic flux density, and core loss reduces, thereby providing a non-oriented or doubly oriented magnetic steel sheet having excellent magnetic characteristics and blanking performance.

IPC 1-7

C21D 8/12; **H01F 1/147**

IPC 8 full level

C21D 3/00 (2006.01); **C21D 8/12** (2006.01); **H01F 1/147** (2006.01); **C21D 3/04** (2006.01)

CPC (source: EP KR US)

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